



STATE OF CALIFORNIA
Department of General Services - Office of Procurement

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PURCHASE ORDER

Purchase Order No. Rev. Date
62139 6/30/2008

Form GSOP I-PIN (04/98)

Supplier No. 809048	Solicitation No. 57018	Delivery Date As Specified	FOB Point Destination	Invoice Terms
S h i o P		DEPT OF WATER RESOURCES (SEE ITEM 8 - "DELIVERY" OF THE ADMINISTRATIVE REQUIREMENTS #67129AR)		C h a r g e
Agency Billing 81000		Agency Purchase Estimate 6000018173	Purchase Estimate 67129	Revision 1
Agency Contact BILL MAHON		Phone 916-653-6167	Date Received	

WEST MARK
PO BOX 100
2704 RAILROAD AVENUE
CERES, CA 95307
Attn: STEVE BUCKNER

Phone: 209-537-4747

Item No.	Quantity	Unit	Commodity Code	Description	Unit Price	Extension
<p>The General Provisions for Non-IT Commodities are hereby incorporated by reference. These General Provisions can be obtained by phoning (916) 375-4400 or by accessing our website at:</p> <p>http://www.documents.dgs.ca.gov/pd/modellang/GPhonIT0407.pd</p> <p>The following information is provided for agency use only:</p> <p>Small Business: NS Fiscal Year: 2007/2008</p>						
1	2	EA	2320-000-0049-0	TRUCK CAB & CHASSIS (AS DESCRIBED)	252,269.0000	504,538.00
<p><u>TRUCK, FISH TANK, 3500 GALLON</u> in accordance with:</p> <p>Truck, Fish Tank, 3500 Gallon Specification #2320-0030 (11 Pages) dated 7/21/08.</p> <p>Truck, Fish Tank, 3500 Gallon Administrative Requirements #67129AR (4 Pages) dated 7/21/08.</p> <p>Truck, Fish Tank, 3500 Gallon Acceptance Testing #67129TEST (1 Page) dated 7/21/08.</p> <p>Truck, Fish Tank, 3500 Gallon Questionnaire #66934TQ (67129) (2 Pages) dated 7/22/08.</p> <p>Brand: <u>WEST-MARK/STERLING</u> Model: <u>2TINC/FISH/LT9500</u></p> <p><u>PO Miscellaneous Charges and Discounts</u> BATCH ADJUSTMENT (CHARGE)</p> <p style="text-align: right;"><u>Dollar Value</u> 35.00</p> <p style="text-align: right;">Total Value: 504,573.00</p>						

Sales and/or use tax to be extra unless noted above

Buyer JIM MORES <i>jim mores</i>	Phone 916-375-4468	BOC Number
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Jon Chey

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Item No.	Quantity	Unit	Commodity Code	Description	Unit Price	Extension
<p><u>F.O.B. Destination Requirement</u></p> <p>For the purpose of this award only F.O.B. destination will be accepted.</p> <p><u>Addendums #1 and 2</u></p> <p>Are incorporated and now are part of this purchase order.</p> <p><u>California Tire Fee Act</u></p> <p>A fee of \$1.75 per tire is added to the purchase order to cover the costs imposed by the California Tire Fee Act (California Public Resources Code Section 42885 et. seq.).</p> <p>The one time recycle fee of \$1.75 per tire, for twenty (20) tires totaling \$35.00 is included in this purchase order.</p> <p><u>Purchase Order Award</u></p> <p>This purchase order is being awarded on September 8, 2008 pursuant to Government Code Section 13332.17. Any encumbrances made pursuant to this purchase order shall be construed to have been made on the last day of the preceding fiscal year.</p> <p><u>Change Orders</u></p> <p>This Purchase Order may be amended, modified, or terminated at any time by mutual agreement of the parties, in writing. Change orders amending, modifying or terminating the Purchase Order, including any modifications of the compensation payable, may be issued only by the State Procurement Officer. All such change orders shall be in writing and issued only upon written concurrence of the supplier. Termination, as that term is used in this section, does not include termination for default of the supplier.</p> <p>This purchase order had been registered into the State Contract and Procurement Registration System (SCPRS) (https://www.scprs.dgs.ca.gov/). The registration number is: 38600908331874</p>						



STATE OF CALIFORNIA
BID SPECIFICATION
TRUCK, FISH TANK, 3500 GALLON

2320-0030

1 SCOPE

This specification establishes the minimum requirements for a 3-axle, diesel powered truck with a conventional cab equipped with a 3,500 gallon stainless steel fish hauling tank and appurtenant equipment. The fish hauling truck will be used to transport water and live fish with aquatic debris from the Skinner Fish Collection Facility in Tracy, California to four fish release sites located on the Sacramento and San Joaquin Rivers. The supplier is responsible for providing a truck that meets the following minimum requirements.

2 APPLICABLE SPECIFICATIONS / STANDARDS / CODES

Specifications, standards and codes referenced in this document in effect on the opening of the 'Invitation For Bid', form a part of this specification. The vehicle furnished under these specifications shall conform to all of the requirements of all Divisions and Chapters of the following publications:

1. Federal Motor Vehicle Safety Standards, Federal Highway Safety and DOT.
2. California Motor Vehicle Code.
3. California Code of Regulations (i.e. Title 8, Title 13, Title 15, Title 21).
4. A plate identifying the manufacturer, tare weight, gross vehicle weight rating (GVWR), date of manufacture and all other information as specified in the National Traffic and Motor Vehicle Safety Act, Section 114, and Federal Code of Regulations, Title 49, shall be attached to the truck frame or body in an easily accessible location.
5. Federal Certification: Final stage manufacturers shall be certified by National Highway Traffic Safety Administration and be registered to manufacture or alter vehicles in accordance with the code of Federal Regulation, Title 49, Parts 567-568.
6. Current California Air Resources Board (CARB) emission requirements.
7. Society of Automotive Engineers (SAE), International Standards Organization (ISO), American Society of Mechanical Engineers (ASME), ASTM International (ASTM), and American Welding Society (AWS).

3 TRUCK CHASSIS REQUIREMENTS

3.1 GENERAL

The vehicle shall be new and equivalent in style, quality, and appointments to those offered to the general public. The vehicle shall be supplied with all equipment and accessories indicated as standard equipment in the manufacturer's published literature. Optional equipment necessary to meet the requirements of this specification shall also be installed.

- GVWR: 60,000 pounds (minimum).
- GCWR: 80,000 pounds (minimum).
- Curb Weight: 17,500 pounds (maximum) with full capacity of fuel.
- Cab to Axle Centerline: 160 ± 6 inches (approximate, to be determined during pre-build meeting).
- Cab to End of Frame: 180 inches (minimum).
- Vehicle Width: 8.5 feet (maximum).
- Vehicle Height: 13 feet (maximum).

3.2 ENGINE

The vehicle shall be equipped with the manufacturer's standard diesel engine that meets the following minimum requirements:

- Power: 380 hp gross (minimum).
- Torque: 1450 lbs.-ft. (minimum).
- Engine brake (Jacobs or equivalent).
- Air cleaner, dual element with restriction indicator mounted inside cab.
- Fuel water separator.

3.3 COOLING SYSTEM

The manufacturer shall provide its heavy duty cooling system and contain coolant/anti-freeze rated for - 40°. The radiator shall come equipped with a thermostatically controlled fan with an override switch installed in the cab. The radiator shall be equipped with a fixed bug screen behind the grill and in front of the radiator. All water hoses shall be high temperature, reinforced silicone rubber hoses or EPDM (Ethylene Propylene Diene Monomer).



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3.4 ELECTRICAL SYSTEM

- System Voltage: 12 Volt
- Alternator: 160 amp (minimum).
- Battery: Maintenance free type with 1825 CCA at 0° F.
- Resettable breakers shall be supplied in lieu of fuses where available.
- Provide a cab mounted switch panel with LED indicators and labels for all referenced cab mounted switching.

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3.5 TRANSMISSION

The transmission shall be an automatic transmission with 6 forward speeds and one reverse speed designed for on/off highway use (reference models 4000 RDS P, HD 4560P or equivalent). In addition, the transmission shall be equipped with a factory water-to-oil transmission cooler. The controls shall be push button activated with a range hold option. Transmission shall be filled with synthetic transmission fluid (reference Allison Transynd) and labeled as such.

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3.6 BRAKES

Self adjusting air brakes with an Anti-lock Brake System (ABS) shall be included. Brakes shall come equipped with an air compressor capacity of 15 CFM (minimum) and include a heated air dryer.

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3.7 STEERING

Steering gear shall have either double steering boxes or a single steering box and a power assist ram.

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3.8 WHEELS & TIRES

Ten (10) steel belted radial tubeless type tires, completely mounted and balanced on the wheels, shall be furnished. The front tires shall be size 365/70R22.5, Load Range L (minimum) with highway tread. The rear tires shall be size 11R24.5, Load Range H (minimum) with mud and snow type tread. All tires supplied on this order shall be of the same make and model (Front and Rear Tires May Differ in Model), and meet the minimum GAWR. All wheels shall be of the 10-stud, hub-piloted, steel type with five hand holds and wheel widths shall be as recommended by The Tire and Rim Association Inc. and the tire manufacturer. Tire chain clearance shall be provided for dual tire chains with triple side chains.

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3.9 AXLES

The front axle shall have a Gross Axle Weight Rating (GAWR) of at least 20,000 pounds and shall be set back approximately 40-inches if weight distribution allows. The front axle shall be equipped with Stemco style hub seals with site glass and shall be filled with synthetic oil and labeled as such. The rear axles shall have a combined GAWR of at least 46,000 pounds and be a single reduction tandem type with both axles driving. Rear axle ratio shall be determined by the truck manufacturer in order to maintain a 65 MPH road speed under full load. The rear axle shall be supplied with an inter-axle lock and a differential lock on the front tandem with controls and an indicator light. The rear axle shall have Stemco type seals filled with synthetic oil and labeled as such. Rear axles shall come equipped with an ABS traction control system that works in conjunction with the ABS braking system. When fully loaded, the maximum weights on each axle shall not exceed the most recent State of California Vehicle Code.

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3.10 SUSPENSION

The front suspension shall be the tapered leaf type with heavy duty shock absorbers. Rear Suspension shall be a leaf spring type with equalizing beam, and heavy duty shock absorbers (reference Hendrickson RT-463 or equivalent).

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3.11 FRAME

The Resistance Bending Moment (RBM) of the frame shall not be less than 3,200,000 in.-lbs. per rail. The rails shall be fabricated from steel with minimum yield strength of 110,000 PSI. Each rail shall be full length with no splicing or added extensions.

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3.12 FUEL TANK

Aluminum fuel tanks with a total capacity of no less than 150 gallons.

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3.13 AIR CONDITIONING

A multi-speed cab heater, air conditioning and windshield defroster shall be included. The system shall come equipped with fresh air ventilators or combination fresh air and recirculating ventilation system.



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3.14 CAB

The following items, supplementing if necessary those items already cataloged as standard cab equipment, shall be furnished and installed:

- 3.14.1 Dual visors
- 3.14.2 At least one 12 volt DC interior power outlet (cigar lighter type).
- 3.14.3 Dual, two-speed, windshield wipers with intermittent feature.
- 3.14.4 Dual windshield washers.
- 3.14.5 Instrument Cluster shall contain, at a minimum the following items:
 - Speedometer
 - Tachometer (with redline indicator)
 - Coolant temperature
 - Primary and secondary air pressure
 - Oil pressure
 - Fuel level
 - System voltage
 - Engine running time (hour meter)
- 3.14.6 Interior lights activated by opening either door and with a manual switch.
- 3.14.7 Cab mounted air horns
- 3.14.8 Right and left outside rearview mirrors shall be heated with control switch inside the cab and shall be stainless steel with 102-inch wide spacing.
- 3.14.9 Visibility window in the lower forward section of the right door or a look down mirror.
- 3.14.10 Steps and grab handles to safely enter and exit the cab on both sides.
- 3.14.11 Floor mats, headliner and full cab insulation.
- 3.14.12 Driver seats shall be adjustable air-ride suspension type with high back head support and dual arm rests. The passenger seat shall be a matching standard seat with high back head support and dual arm rests.
- 3.14.13 Seat belts for all seating positions.
- 3.14.14 Interior color shall be one of the neutral colors among the manufacturer's standard colors.
- 3.14.15 Three sets of keys shall be provided.
- 3.14.16 All locks shall be keyed alike.
- 3.14.17 Standard manufacturer's AM/FM/WB (Weather Band) radio, speakers and antenna.
- 3.14.18 Cruise Control.
- 3.14.19 Adjustable tilt and telescoping steering column.
- 3.14.20 Daytime running lights.

3.15 PAINT AND UNDERCOATING

The cab, hood and fenders shall be finish painted with the manufacturer's standard white lead-free enamel paint (lead-free: 100-PPM maximum based on dry paint). The finish coat shall be free from runs, drips, sags, etc., and shall be evenly applied to provide a gloss finish.

The frame, suspension, and other truck components located near or underneath the tank shall be coated with an additional protective coating where feasible to prevent corrosion resulting from exposure to the salt water being transported.



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3.16 MISCELLANEOUS

The following miscellaneous equipment shall be furnished and installed:

- Tow hook(s) or pin(s) mounted on the front for towing the vehicle.
- Standard tool kit including wheel changing tools (if available).
- Rear mud flaps.
- Diamond tread cover on battery box
- Stainless steel quarter fenders over tandem axle.
- Provide and install LED tail, brake, turn, identification markers, and back up lights mounted to the rear end of each truck bed frame. Lights to be wired to the truck's electrical lighting system.

4 FISH HAULING TANK REQUIREMENTS

4.1 PERFORMANCE REQUIREMENTS

Furnish, install and test the fish hauling tanks and associated equipment onto two truck chassis meeting the minimum requirements in Section 3. The completed unit shall not be longer than 32-feet as measured from the front bumper to rear bumper. The fish truck hauling tanks to be used to transport water, live fish and aquatic debris from the Skinner Fish Collection Facilities to the fish release sites along the Sacramento and San Joaquin Rivers. The fish truck hauling tanks with associated equipment to have the following requirements:

- Fish hauling tank capacity of 3500 gallon (minimum) when filled to the top of the tank.
- Materials for the fish truck hauling tanks and associated equipment to be designed to handle water with a salinity concentration of 8 parts per thousand and shall not be harmful the aquatic life being transported.
- Inside of the tanks to be smooth, with all welds ground flat (flush), and no sharp edges.
- Provide and install an oxygen supply and distribution system for each fish hauling truck tank.

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4.2 EQUIPMENT

The following is written in singular form, but applies equally to each of the fish truck hauling tanks with associated equipment. General tolerance for all linear dimensions listed in this specification shall be ± 0.5 inches unless explicitly stated or unless the dimensions are describing hoses or pipe fittings.

4.2.1 The following materials types shall be used as designated in the construction of the tank and appurtenant equipment:

Stainless Steel

- ASTM A167 or A 240, Type 316 or 316L for plates, sheets, and strips.
- ASTM A 269, Type 304 or 316 for tubing.
- ASTM A 276 or ASTM A 479, Type 316 or 316L for bars, flats and angles.
- ASTM A 276 or ASTM A 479, Type 304, 304L, 316 or 316L for tee and beam shapes.
- ASTM A 312, Type 304 or 316 for pipes.
- ASTM A 313, Type 302 or 18-8 PH for mounting bolt springs.
- ASTM F 593, Type 316 or 316L for stainless steel bolts.

Aluminum Hatch Lids

- Aluminum Alloy 6061-T6.

Structural Steel

- ASTM A36

Steel Bolts

- Unless otherwise specified, steel bolts (0.5-inch diameter and larger) will be ASTM A 325, galvanized.

Neoprene Hatch Seals, Oxygen Bottle Holder Neoprene Pads and Hatch Lid Neoprene Bumpers:

- Oil, sunlight and ozone resistant.
- Shore A durometer hardness in the range of Grade 40 to 55.
- Tensile strength of at least 1000 pounds per square inch.
- Suitable for temperatures up to 170 degrees Fahrenheit.
- Thickness: 1-inch for the hatch seals. Other thickness for other pads and bumpers shall provide adequate cushioning.



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4.2.2 Fish Truck Hauling Tank:

- The hauling tank plates and bars, tank frame supports, mounting brackets, hatch structures and outlets to be fabricated from stainless steel type 316 or 316L, and designed for truck transportation. Tank stiffener beams, tees, pipes, tubes and angles to be fabricated from stainless steel 304, 304L, 316, or 316L.
- Hauling tank capacity: 3500 Gallon minimum capacity when the water level is filled to the top of the tank.
- The tank to be a "U" shaped tank or elliptical shape. Front end of tank to be installed approximately 33 inches away from the truck cab to allow clearance for the oxygen bottle storage.
- Tank stiffeners and supports: Use external tank stiffeners and supports to provide a smooth tank interior. Half baffles with the bottom open to allow the free flow of water, debris, and fish through the discharge are acceptable.
- The tank is to be insulated using 3-inch styrene foam sheets for the barrel and fiberglass at the tank heads.
- The top of the tank designed to support uniform live loads of 150 pounds per square foot and a concentrated load of 300 pounds per foot of length, located anywhere on the tank top. Tank top also designed for the hatch loading and for the walkway dead and live loadings described in other sections.
- Tank supports and mounting systems to slope the tank bottom invert at 1.5 degrees (sloped to drain the tank toward the rear end of the tank) when mounted onto the fish hauling truck.
- Hauling tank provided with supports and mounting brackets to be designed to carry and transfer the loads of the hauling tank full of water to the frame rails of the vendor supplied truck chassis. The tank supports and mounting brackets specifically designed for truck transportation (flexible mounting arrangement using neoprene mountings and spring-loaded brackets).
- Mounting bolt springs: Springs to be Stainless steel (ASTM A 313: Type 302 or 18-8 PH) helical compression springs with ground closed ends. Designed for a service life of 100,000 deflections.

4.2.3 Exit Port:

- Provide a water/fish exit port at the back end, invert of the tank. The exit port to be an eccentric transition (invert remains in common plane with the tank invert) that reduces from a 16-inch high by 24-inch wide opening in the tank end to a 10-inch diameter flanged opening. The exit port transition designed to completely drain the tank. See Figure 1 in the drawing package for construction details (Note: Parts that are numbered in all of the included drawings have a description included on the "Parts List" file).

4.2.4 Tank access hatches:

- Provide two access hatches in the top of each tank.
- One hatch to be located near the front center section of the tank length and the other hatch to be located near the rear end of the tank length.
- Each hatch to be 30-inch inside diameter, flanged, access manhole provided with neoprene seal and hinged, water tight lid. Drill and countersink the bolt holes in the neoprene hatch seals to match the hatch flange holes and bolt to the hatch flange.
- The tank and hatches to be designed to support a fish transfer bucket (with water, fish and debris) on the top of one of the hatch flange neoprene seals. The weight of the fish transport bucket with water, fish and debris to be approximately 7000 pounds.
- Hatch lids to be round and fabricated out of aluminum, with opening handle on top.
- The hinge of the hatch to allow the hatch lid to rotate completely out of the way so not to interfere with placing the fish transport bucket on the hatch flange. Provide hinges with press fit bushings.
- Provide hatches with easy to operate, hatch hold down, draw-type latching system for the lids, which compresses the neoprene seals, and provides water tight sealing of the lids, even during transport.
- Hatch lids designed to be operated safely by a single person.
- One of the top hatches shall be located within 18-inches of the center of the truck as measured from the front bumper to the rear bumper.

4.2.5 Combination Air Vent/Vacuum Relief:

- Provide two, 6-inch diameter, stainless steel, flanged outlets. Locate one outlet at the front and one outlet at the rear end of the tank top. The front outlet to allow installation of the extension pipe and



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combination air vent/vacuum relief valve. Furnish and install a stainless steel blind flange, gasket and stainless steel bolts for installation on the rear outlet. Drill and tap for and provide a stainless steel pipe nipple with adjustable, pressure relief valve in the blind flange.

- The stainless steel 1" relief valve to have an adjustable pressure range of at least 0.5 to 75 pounds per square inch.
- Set the relief pressure at 3 pounds per square inch (maximum).
- The combination air vent/vacuum relief valve shall vent oxygen supplied to the tank by the air stones. The valve shall provide positive sealing when the water inside the tank sloshes during travel, lifting the valve's float ball. It shall have a 4-inch inlet minimum and an aluminum body and baffle with an inert solid plastic float ball. This shall be mounted on a 2-foot long stainless steel extension pipe with flanged ends to be installed between the fish hauling tank 6-inch diameter flange outlet and the air vent flange. Provide a stainless steel air vent perforated plate between the tank flange and the flanged end of the extension pipe to keep larger debris from entering the air vent/vacuum relief valve. Provide gaskets between all surfaces to seal the flanged joints. The screen shall be a perforated plate with 0.1875-inch diameter (maximum) holes. The vent opening shall be positioned toward the back of the truck.
- Included in the drawing package are Figure 2 for the "Air Vent Assembly," Figure 3 for the "Air Vent Perforated Plate and Flange," and Figure 4 for "Air Vent Extension Pipe" which have the construction details of this component.

4.2.6 Emergency Drain:

- Provide one 2-inch diameter (minimum), stainless steel, threaded outlet with plug on the lower back end of the tank to be used as an emergency drain. Outlet will not completely drain the tank.

4.2.7 Screened Outlet System:

System used to control the outflow of water from the hauling tank during the loading process, thus controlling the inflow of water/fish/debris into the hauling tank from the fish transport bucket.

- Provide one outlet located in the rear end of the hauling tank on the driver's side for use with the screened outlet system. Size the tank outlet to allow removal and installation of the screen through the tank outlet hole. Included in the drawing package are Figure 5 "Screen Outlet System," Figure 6 "Fish Screen," and Figure 7 "Outer Flange Assembly" which have the construction details of this component.
- Fish screen: Stainless steel type 316 or 316L, cylindrical, drum/single screen type fish screen assembly. Fish screen to be 16-inches in diameter with a screening length of approximately 18-inches. Screen to provide at least 5 square feet of screening area. Screen provided with an 8-inch flanged outlet. The fish screen to be fabricated from wedge wires, vee wires or profile bars with 1.75 millimeter maximum slots, providing at least 40 percent open area. The screen slots to widen inwardly from the screen surface to minimize the chance of debris entrapment in the screen openings. End plates of screen to be at least 0.105-inch thick. Screen assembly designed to withstand a differential hydrostatic collapse pressure of 5 feet of water and designed for horizontal, cantilever loadings. Screen provided with an internal stainless steel pipe (6- to 8-inches in diameter) with perforated holes designed to provide a low head loss, uniform flow field over the entire screen surface. Internal pipe to extend to the upstream end plate. The internal pipe will also be used as part of the screen water back flush cleaning process.
- Outer flange assembly: Stainless steel type 316 or 316L. The fish screen flanged outlet to be bolted to, and supported by the larger outer flange assembly. The outer flange assembly bolts to the hauling tank screen outlet. Provide a flange on the 4-inch diameter end of the stainless steel pipe to connect the butterfly valve. Provide the necessary gaskets, stainless steel bolts, nuts and washers to provide complete, watertight connections.
- Pneumatically Operated Butterfly Valve Assembly: Stainless steel, flanged style, 4-inch diameter, butterfly valve designed to be operated by the pneumatic cylinder actuator. Valve to provide a positive water-tight seal and it shall be rated for a working pressure of 150 psi and designed for cold water service and outdoor use. Provide a 4-inch diameter stainless steel quick connect/disconnect cam and groove hose coupling, and an 8-foot long, 4-inch diameter flexible hose. Flanged end of pipe extension to connect to the downstream flange of the butterfly valve. The assembly shall have gaskets and stainless steel bolts, nuts, and washers.
- Butterfly valve and pneumatic cylinder to be supplied by the same manufacturer. The actuator shall be designed to fully open and close the valve and shall be suitable for a normally closed type valve.



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The actuator shall be directly mounted to the butterfly valve with the stems directly coupled. There shall be limit switches set at the fully open and fully closed valve positions.

- A heavy-duty, manual lever controlled, two position, four way air valve designed for controlling the butterfly valve pneumatic cylinder actuator. The lever shall be a friction positioned and/or supplied with detents or pin locks so the spool stays in position when the handle is released. The valve shall be located at the rear of the tank and easily accessible for the operator. The control valve shall have a combination air muffler/flow control in the exhaust port.
- Air hoses and air lines shall be designed for air type outdoor use.

4.2.8 Fish Release Knife Gate:

- Knife Gate Valve, 10-inch, pneumatically controlled, flange type designed to be operated by an actuator from the same manufacturer. It shall operate from the chassis air system and be rated for 150 psi. The gate port area shall be 100% of the full pipe area throughout the entire length. The gate and body shall be 316 or 316L stainless steel and the stem shall be 304 or 316 stainless steel. The stem nut shall be acid resistant bronze. The seat shall provide a positive, water-tight shutoff, even under low pressure. The knife gate shall bolt to the fish truck hauling tank exit port flange and the discharge extension piping shall be bolted to the downstream flange of the knife gate. Provide a pipe support to the access platform.
- Provide and install a 10-inch diameter discharge extension pipe to be bolted to the downstream end of the knife gate on each tank. Provide a pipe support between the extension pipe and the access platform. Each extension pipe to have one flanged end and the other end a socket/shank coupler with cam levers, type B, quick disconnect connection.
- The actuator shall be designed to quickly and fully open and close the valve and shall be suitable for a normally closed type valve. The actuator shall be directly mounted to the gate valve with the stems directly coupled. There shall be limit switches set at the fully open and fully closed valve positions. The actuator shall be fully supported with brackets mounted on the tank.
- A heavy-duty, manual lever controlled, two position, four way air valve designed for controlling the gate valve pneumatic cylinder actuator. The lever shall be a friction positioned and/or supplied with detents or pin locks so the spool stays in position when the handle is released. The valve shall be located at the rear of the tank next to the access ladder by the knife gate and shall be easily accessible by the operator. The control valve shall have a combination air muffler/flow control in the exhaust port.
- Air hoses and air lines shall be designed for air type outdoor use.

4.2.9 Oxygen Supply and Distribution System:

Oxygen bottle holder:

- Sized to hold and transport four Type "K" size oxygen cylinders (oxygen cylinders to be supplied by others – each cylinder approximately 9-inches in diameter by 57-inches high). The capacity of the bottle shall be approximately 245 cubic feet.
- Pallet type oxygen cylinder holder designed so the holder with oxygen cylinders can be installed and removed from the fish hauling truck by a forklift and it shall be supplied with a hook for use with an overhead crane as well.
- The holder shall be designed to allow access to the oxygen cylinders from the sides for installation and removal once lowered to the ground.
- Structural steel members: ASTM A36, galvanized.
- The holder shall be installed and attached to the equipment platform between the cab and the tank. It shall have an upper support frame extending above the top of the oxygen bottles. It shall be have neoprene pads to prevent the oxygen cylinders from rotating during the hauling truck travel to prevent the flexible pigtail lines from being rubbed and damaged.

Oxygen flexible (pigtail) lines:

- Provide a flexible (pigtail) line from each oxygen cylinder to their respective oxygen manifold connection. Lengths to suit installation.
- Lines and fittings to be specifically designed for oxygen type, outdoor applications.
- Lines and fittings rated for working pressure of 3000 pounds per square inch, minimum.
- Leak proof and air tight, and provided with high strength, stainless steel wire braid to protect the hose against damage from excessive bending, twisting, elongation, vibration, and abrasion.



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- Each line provided with one end fitting to allow attaching to the oxygen cylinder valve and one end fitting to allow attaching to their respective oxygen supply manifold quick connect fitting.
- The stainless steel quick connect/disconnect couplings on the flexible lines and oxygen supply manifold to consist of sleeve-lock socket and plug couplings, each having an automatic shutoff valve that provides instant flow on connect and positive shutoff on disconnect. Can be coupled or uncoupled under pressure without leakage.

Rigid lines for oxygen supply manifold and distribution:

- Stainless steel type 304 or 316 piping or tubing.
- Lines and fittings to be specifically designed for oxygen type, outdoor applications.
- Oxygen supply manifold lines and fittings rated for working pressure of 3000 pounds per square inch, minimum.
- Oxygen distribution lines and fittings (lines downstream of the oxygen pressure regulating valve) rated for working pressure of 150 pounds per square inch, minimum.

Electrical:

- Electrical controls and equipment to operate off the 12-volt DC truck power source. Mount and wire the electrical switches and warning/operating indicating lights inside the truck cab.
- The electric operated oxygen system solenoid valve to operate off the 12-volt DC truck power source. Selector switch mounted in the flowmeter enclosure to allow selecting manual or automatic modes of operation. When in the automatic mode, the solenoid valve to be automatically controlled (opened and closed) by the hauling tank pressure switch.

Pressure regulating valve for oxygen distribution:

Provide and install one threaded outlet in the front end of each hauling tank for the hauling tank pressure switch. Pressure switch to operate off the 12-volt DC truck power source. The pressure switch shall measure the water level in the tank and activate controls that automatically close a circuit when the water in the tank is above a predetermined level, thus opening the electrically operated solenoid valve to let oxygen flow to the flowmeter compartment and on to the oxygen air stones. When the water in the tank is below a predetermined level, the circuit will automatically open, closing the solenoid valve and shutting off the flow of oxygen.

The pressure regulating valve to be used to control the pressure of the oxygen, which is supplied to the flowmeter/air stone system from the oxygen cylinders.

- Designed for air/oxygen type service.
- Rated for inlet working pressure of 3000 pounds per square inch, minimum.
- Adjustable set point range: 100 to 1000 pounds per square inch minimum range.
- Pressure switch to activate a low oxygen pressure warning light mounted in the truck when the oxygen intake pressure (on high pressure side of regulator) goes below a predetermined setting. Preset the low pressure set point to 500 pounds per square inch. The switch shall be rated for 12-volt, DC service.

In-Line filter for oxygen distribution:

- Flow capacity: 17 cfm at 100 pounds per square inch (minimum).
- Replaceable cartridge filter, 5 micron size.
- Mount the in-line filter in the flowmeter metal (stainless steel) enclosure in the oxygen line just downstream of the solenoid valve and upstream of the flowmeters.

Pressure gauge for oxygen distribution:

- Bourdon-tube type.
- Dust-proof and moisture-proof.
- Face diameter to be 2.5 inches, minimum.
- 0 to 150 pounds per square inch minimum range.
- Mount the pressure gauge with an isolating shutoff valve in the flowmeter metal (stainless steel) enclosure in the oxygen line just downstream of the in-line filter and upstream of the flowmeters.

Needle valve flowmeters for oxygen distribution:

- Manually operated needle valve type flowmeters (one flowmeter for every air stone).
- Adjustable flow rate setting: 20 milliliters per minute to 30 liters per minute. Set the oxygen flow rate to the air stone manufacturer's recommended setting (2 liters per minute).



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- Mount the flowmeters in the flowmeter metal (stainless steel) enclosure in the oxygen line just downstream of the in-line filter and pressure gauge. Label each flowmeter based on which air stone it supplies.

Check valves in oxygen distribution lines:

- Designed for air/oxygen flow.
- Rated for working pressure of 150 pounds per square inch, minimum.
- Provides bubble-tight shutoff, and operates quietly without slamming.
- Instantaneous closing of sealing element to protect against backflow of air and water.
- In-line type check valves to be installed in the oxygen line between each of the air stones and their respective isolation valve.

Isolation globe or ball valves in oxygen distribution lines:

- Designed for oxygen service.
- Manually operated, stainless steel globe or ball valve rated for working pressure of 150 pounds per square inch, minimum.
- Provides bubble-tight shutoff.
- Provide one valve per oxygen line.

Air hoses for oxygen distribution:

- Specifically designed for oxygen type, outdoor applications.
- Rated for working pressure of 150 pounds per square inch, minimum.
- Air hose to be leak proof, air tight, and provided with high strength, stainless steel wire braid to protect the hose against damage from excessive bending, twisting, elongation, vibration, and abrasion.
- Provided air hoses with connections and couplings to allow attachment to the flowmeter ports, valves, and the air stone tank connection ports.
- Air hose inside diameter (I.D.) to be 1/4-inch, or the size required by the air stones, whichever is greater.

Air stones for oxygen distribution:

- Microbubble aerator type air stones designed for fish hauling tank applications.
- Air stones to produce micro-bubbles of 100-250 micron size.
- Flow rate: 1 to 2 liters per minute.
- Inlet operating range: 25 to 50 pounds per square inch gauge (psig).
- Molded urethane body with ceramic strip molded to the body.
- Air stone inlet: 1/4" NPT male threaded stainless steel fitting.
- Diffuser tile area: 2.5" x 25".
- Provide six oxygen supply air stones per tank.
- Air stones to be positioned and attached to the tank inside wall with a silicone adhesive recommended by the air stone manufacturer.
- Provide a flexible oxygen line with the necessary fittings between each air stone and their respective connection in the recessed tank port.
- Provide an angled debris deflector plate around each air stone and their connecting interior air line. Extend deflector plate flush with the adjacent tank wall.

4.2.10 Aerators:

- Four (4) aerators (reference Fresh Flo Model TT aerators or comparable) with the following requirements shall be furnished:
 - Minimum shaft lengths of 28-inches.
 - Stainless steel bearing tube.
 - The guide tubes shall extend into the tank approximately 48 inches, but may be shorter to allow approximately 8 inches of clearance from the bottom of the tank.
 - The flow of each aerator shall be 45 gallons per minute.
 - The guide tube screen shall be 1/8 inch mesh.



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- Four aerator openings shall be provided in the top of the tank to accommodate aerators located at the front, middle, and rear of the tank. Two stainless steel toggle clamps per aerator (Ref. De Sta Co. or comparable) shall be installed to secure each aerator.
- An electrical 12-volt weatherproof receptacle (twist lock) with snap back covers shall be mounted next to each aerator opening. The aerators shall plug in using the twist lock plug. The aerators shall be controlled by a switch in the truck cab switch panel and shall have an indicator light when powered.

Flowmeter Metal Enclosure:

- Enclosure: NEMA Type 12 enclosure, stainless steel Type 304 or 316, 16 gauge, minimum.
- Enclosure to have front hinged, lockable door(s) with neoprene gasket.
- Enclosure sized to contain the following equipment for the oxygen systems: pressure regulating valves, flowmeters, solenoid valves, in-line filters, pressure switches, pressure gauges and needle valve flowmeters for the oxygen supply and distribution systems for each fish hauling truck tank.
- Enclosure to be mounted on the equipment platform on the fish hauling truck. Provide the necessary supports, braces, vibration isolators, and attachments.

Exterior Tank Lighting:

- Provide four, exterior, tank lights, wiring and accessory mounting hardware to attach the lights to the handrailing. One of the lights to be attached to the front handrail, and directed to illuminate the top of the tank work area. Two lights to be mounted one each side to illuminate the work area on the sides of the tank; and one light to be attached to the handrailing or access ladder support to shine on the back end of the tank and access platform. Exterior lights to be tractor or utility type lights with 55-watt, H3 halogen replaceable bulb with trapezoid beam pattern.
- Lights to have polycarbonate housing and hardened glass lens.
- Each light provided with adjustable mounting hardware and individual On/Off switches.
- Each light to operate from the 12-volt, DC power source from the truck's battery. Provide fuses for each light circuit.
- Mount the On/Off light switches in the cab of the hauling truck. Label the light switches on the main control switch panel.
- Provide the necessary electrical power cable and flexible conduit between each exterior light to their respective switch and on to the truck's battery.

4.2.11 Tank Access Walkway and Supports:

- Access walkway: Stainless steel safety grating, serrated.
- Provide and install walkway along the front, middle (between the hatches), and along the Passenger's side of each tank top.
- Walkway to be approximately 23-inches wide along the tank front side and middle, and 28-inches wide along the tank top front. The walkway shall be positioned on the passenger side of the tank.
- Walkway supports: Stainless steel 304, 304L, 316 or 316L.
- Provide manufacturer's standard clamp assemblies or anchor clips.
- Walkway to be designed for uniform loads of 150 pounds per square foot and for concentrated loading of 300 pounds per foot located anywhere on the walkway.
- Walkways positioned to not interfere with the opening and closing of the hatch lids or the mating of the loader bucket to the hatch opening.

4.2.12 Tank Handrailing and Supports:

- Handrailing and supports: Stainless steel 304 or 316.
- Handrailing to be 1.5-inch diameter standard pipe.
- Provide handrailing along the front and right (passenger) side of the tank top along the outside edge of the walkways (no handrail required on the left side). The handrailing along the passenger's side shall be hinged as to allow it to fold down to provide clearance for the loading bucket when it is mated with the neoprene sealed manhole cover. The railing shall lock in the up right position and shall have bumpers or other type of retainer installed to support the railing when in the lower position.
- Provide handrailing with 4-inch high kick (toe) plate.
- Attach supports to the fish truck hauling tank or as part of the walkway.



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- 4.2.13 Stainless Steel Access Ladder: Ladder provides access from the rear access platform to the access walkway on the top left (passenger's) side of the tank.
- Ladder: Stainless steel 304 or 316.
 - Attach the stainless steel ladder supports to the rear end of the tank.
 - Ladder handrails/grab bars to extend 2.5 feet (minimum) above the tank top.
 - The ladder shall be angled at approximately 20 degrees from vertical to allow the operator to safely use the ladder when parked on a slope of approximately 20 degrees.
 - Concentrated design load at center of rung: 300 pounds.
 - Safety treads: Raised button, serrated-edge, or metal bonded encapsulated grit surface on ladder rungs.
- 4.2.14 Tool Box:
- Provide and bolt stainless steel tool box (stainless steel type 304 or 316) with hinged, lockable lid on the driver's side above the rear fender. Tool box to be approximately 10-inch deep by 86-inches long by 10-inches high with 16 gauge minimum thickness. Tool box to include stainless steel mounting support braces and bolts.
 - Provide a tool box, similar in style to the above described tool box, on passenger side that is approximately 18-inches deep by 24-inches long by 18-inches tall.
- 4.2.15 Access Platform:
- Structural steel: ASTM A36 and ASTM A500, galvanized.
 - Design, provide and attach an access platform to the back end of the truck frame. Access platform to be approximately 8-feet wide by 3-feet long.
 - Top of access platform to be approximately 29-inches (± 3 inches) above the level ground and provided with a step rung that is approximately 19-inches (± 2 inches) above the ground.
 - Provide the access platform with mounting attachments and supports for attaching the platform to the truck's frame.
 - Platform top to be a non-skid surface, either diamond plate or safety grating.
 - Platform and mounting supports designed for uniform loads of 150 pounds per square feet and a concentrated load, located anywhere on the platform, of 300 pounds. Also design the platform for the knife gate support and associated loading.
- 4.2.16 Wash Down System:
- Provide a water wash down system to consist of a stainless steel hose reel with electric rewind (mounted on the top front of tank on the passenger side), 50 feet of $\frac{3}{4}$ hose, adjustable nozzle, and plumbing to a hose quick disconnect located near the front of the tank on the driver's side. This hose connection should have a y-strainer to strain debris from the raw water.

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4.3 FABRICATION

- 4.3.1 Provide a truck cab and chassis meeting the minimum requirements of this specification and suitable for this application.
- 4.3.2 Install the fish truck hauling tanks and associated equipment in accordance with these specifications. The installation to include connecting all air lines, oxygen lines, electrical conductors, conduit, controls, and grounding. Tighten all the mounting bolts to properly compress the springs.
- 4.3.3 Utilize the following standards during fabrication:
- Welding Fittings: ASME/ANSI B 16.9, stainless steel.
 - Threaded Fittings: ASME/ANSI B 16.11 or ASME B 16.3, stainless steel.
 - Flanges: ASME B 16.5 or AWWA C 207, stainless steel.
 - Flange Gaskets: AWWA C 207.

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4.4 FINISHES

- 4.4.1 Passivate stainless steel components of the fish truck hauling tanks and associated equipment. Do not coat aluminum, brass, or bronze members.
- 4.4.2 Galvanize the steel members of the access platforms, equipment platforms, and the oxygen bottle holders. Galvanize in accordance with the requirements of ASTM A 123, ASTM A 153, and ASTM A 385.
- 4.4.3 Coat the other equipment components in accordance with the equipment manufacturer's standard permanent coating system for outdoor service and exposure to salt water.

LIST OF PARTS (NUMBER REQUIRED FOR TWO ASSEMBLIES)

PART NO.	DRAWING NUMBER	NO REQ'D.	DESCRIPTION	MATERIAL*
1	214-D-25709	2	Tank	Stainless steel
2	214-D-25711	4	Hatch cover (lid)	Aluminum
3	"	16+8	Locking handle	Stainless steel
4	"	16+8	U-bolt	
5	"	16	Truck frame bracket	
6	"	2	Trough	
7	"	2	Trough	
8	"	2	Front grating	See Specifications
9	"	2	Middle grating	
10	"	2	Side grating	
11	"	32+16	Mounting bolt with spring, hex. nut and two washers	Stainless steel
** 12	214-D-25712	2	Fish screen	
** 13	"	2	Outer flange assembly	
** 14	"	2	Cam-and-groove hose coupling with flexible hose	
** 15	"	2	Air vent extension pipe	
** 16	"	2	Exit port transition	
** 17	"	2	Discharge extension	
18	"	2	Front handrail	
19	"	2	Driver's side handrail	
20	"	14	Handrail support sleeve	
21	215-D-25713	8	Bottle clamp	Structural steel (Galvanized)
22	"	2	Oxygen bottle holder assembly	
23	"	40+8	Wing nut	
24	214-D-25714	2	Equipment platform	
25	"	4	Horizontal clamp	Stainless steel
** 26	"	2+2	Air vent perforated plate	
** 27	"	2	Air vent flange	See specs.
28	No Details	2+2	Combination air vent/vacuum relief valve	
29	"	12+6	Air stone (oxygen + compressed air)	Stainless steel
30	"	2	Tool box	See specs.
31	"	4	Rear fenders with mud flaps	
32	"	2	Pneumatic operated 10" knife gate and actuator	
33	"	2	Air valve for knife gate	
34	"	2	Pneumatic operated 4" butterfly valve and actuator	
35	"	2	Air valve for butterfly valve	
36	"	2+2	Tank pressure switch/sensor	
37	"	2	Flow meter metal enclosure	Stainless steel
38	"	8	Exterior tank lighting	See specs.
39	"	2	Access ladder	Stainless steel
40	"	2	Access platform	Structural steel
41	"	2	Truck back lights (sets)	See specs.
42	"	2+1	Air compressor	
43	"	2	16 Gallon air receiver	Stainless steel
44	"	2	3 Gallon air receiver	
45	"	48	1/2" Dia. x 3" long hex. hd. bolt and hex. nut with two std. plain washers	
46	"	64	1" Dia. hex. hd. bolt and hex. nut with two std. plain washers	
47	"	56	3/4" Dia. x 1" long hex. hd. bolt and hex. nut	

Figure 1

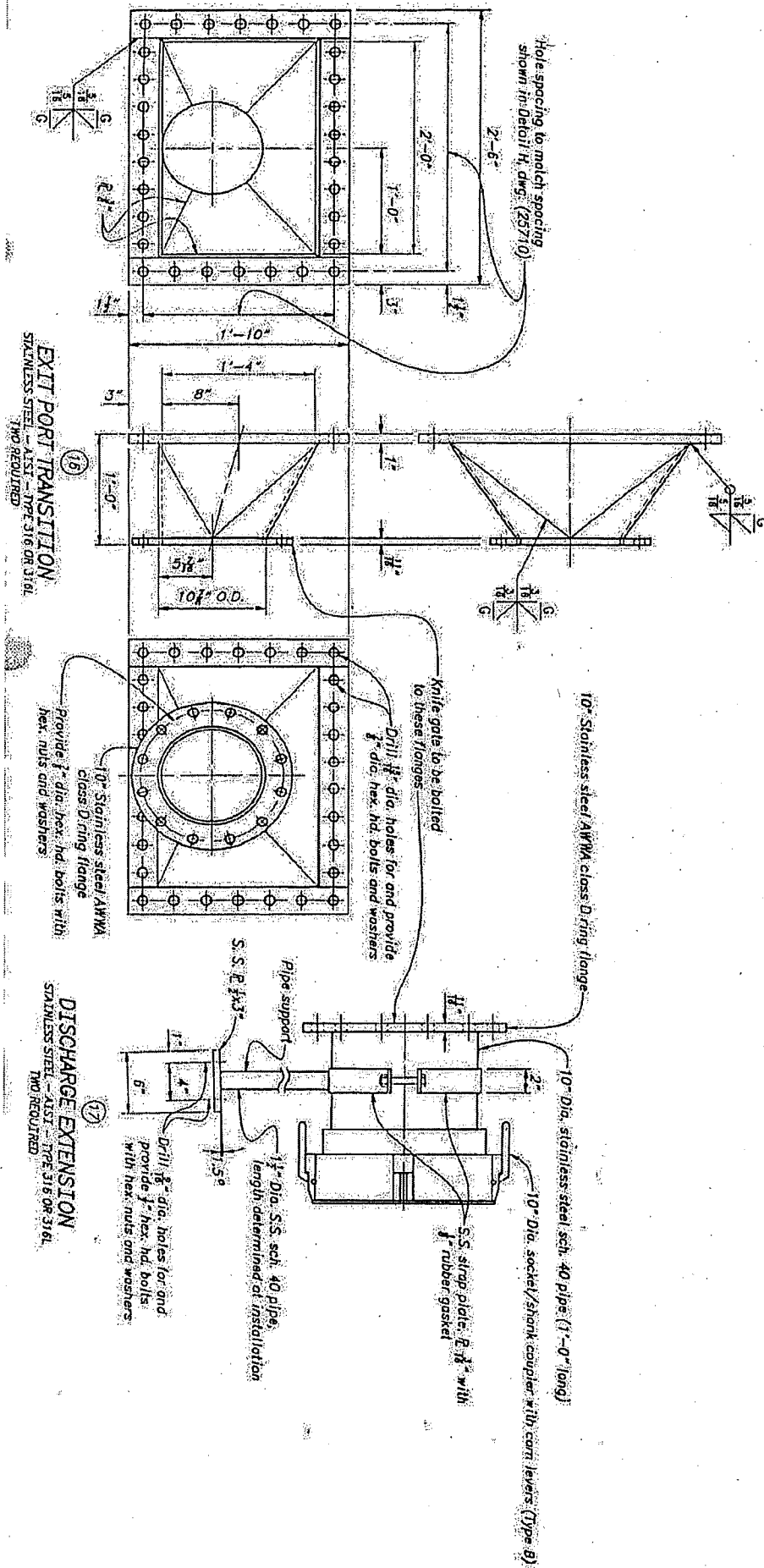
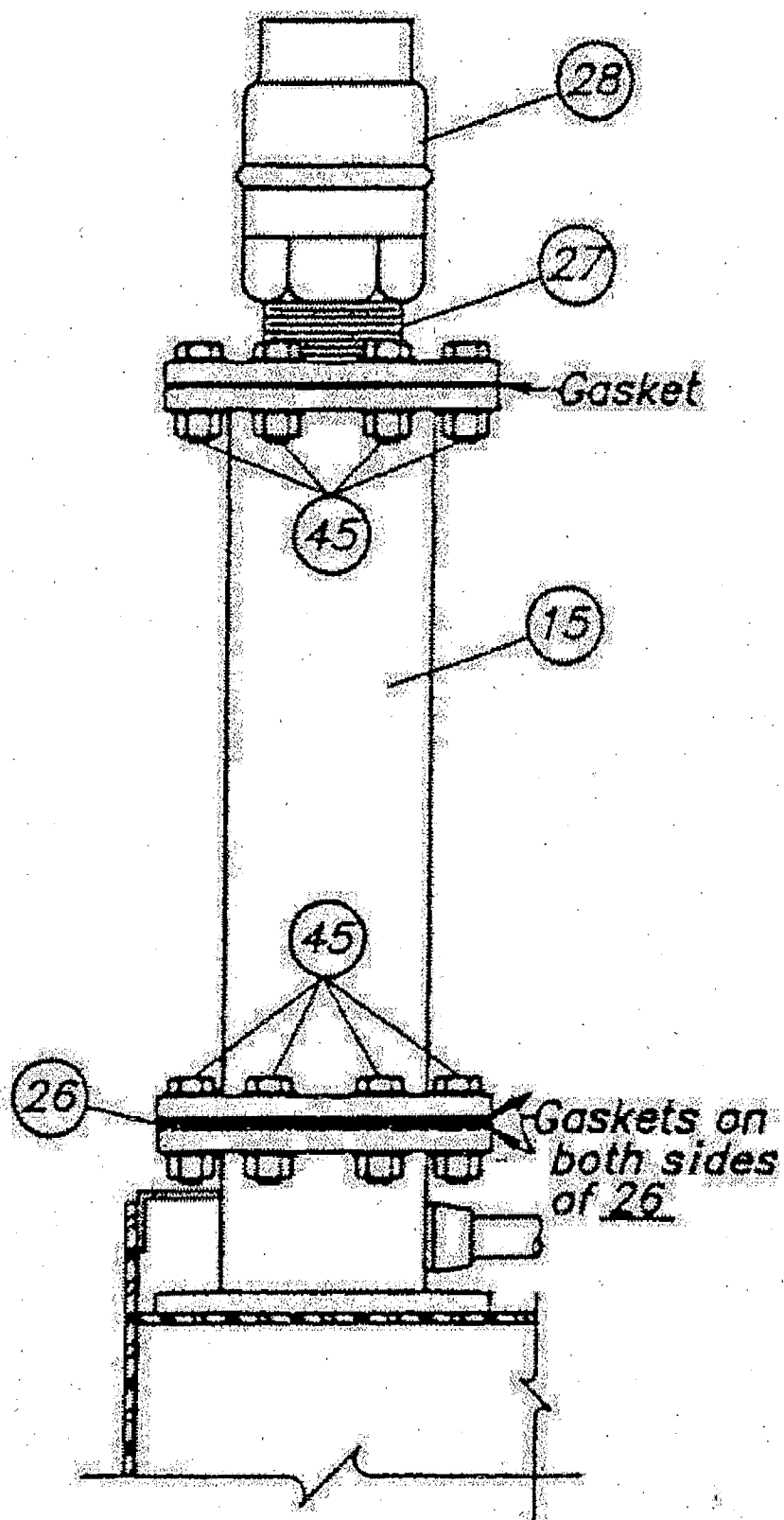


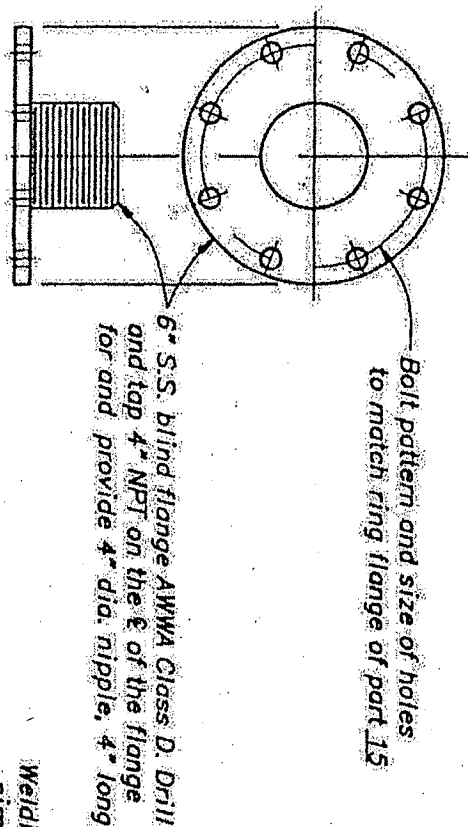
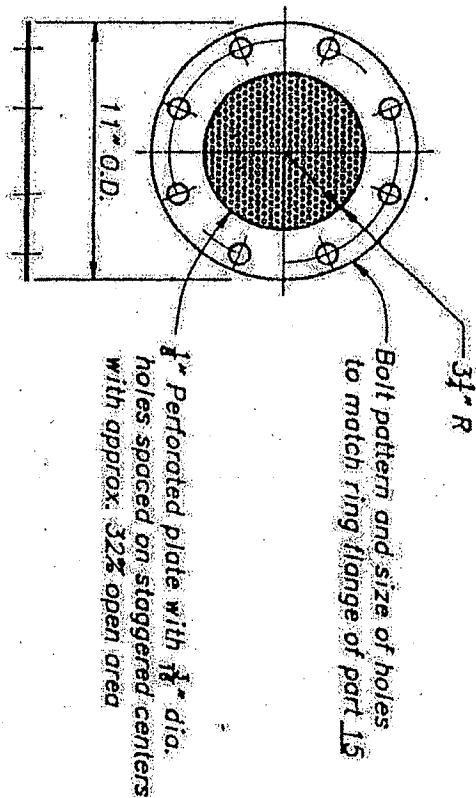
Figure 2



Air Vent/Vacuum Assembly

Figure 3

AIR VENT PERFORATED PLATE STAINLESS STEEL - AIST - TYPE 316 OR 316L FOUR REQUIRED (2+2 SPARES)



NOTES

Welding symbols apply to the joints of all members of similar identification.
Unless otherwise noted, joints not covered by a weld symbol shall be seal welded, wherever possible, to exclude water.
All fillet welds shall be returned.
All fabrication shall be completed before hot-dip galvanizing.
Hot-dip galvanizing shall be in accordance with the applicable provisions of ASTM A123 and A385.
Drill vent holes in tubes for galvanizing.

Figure 4

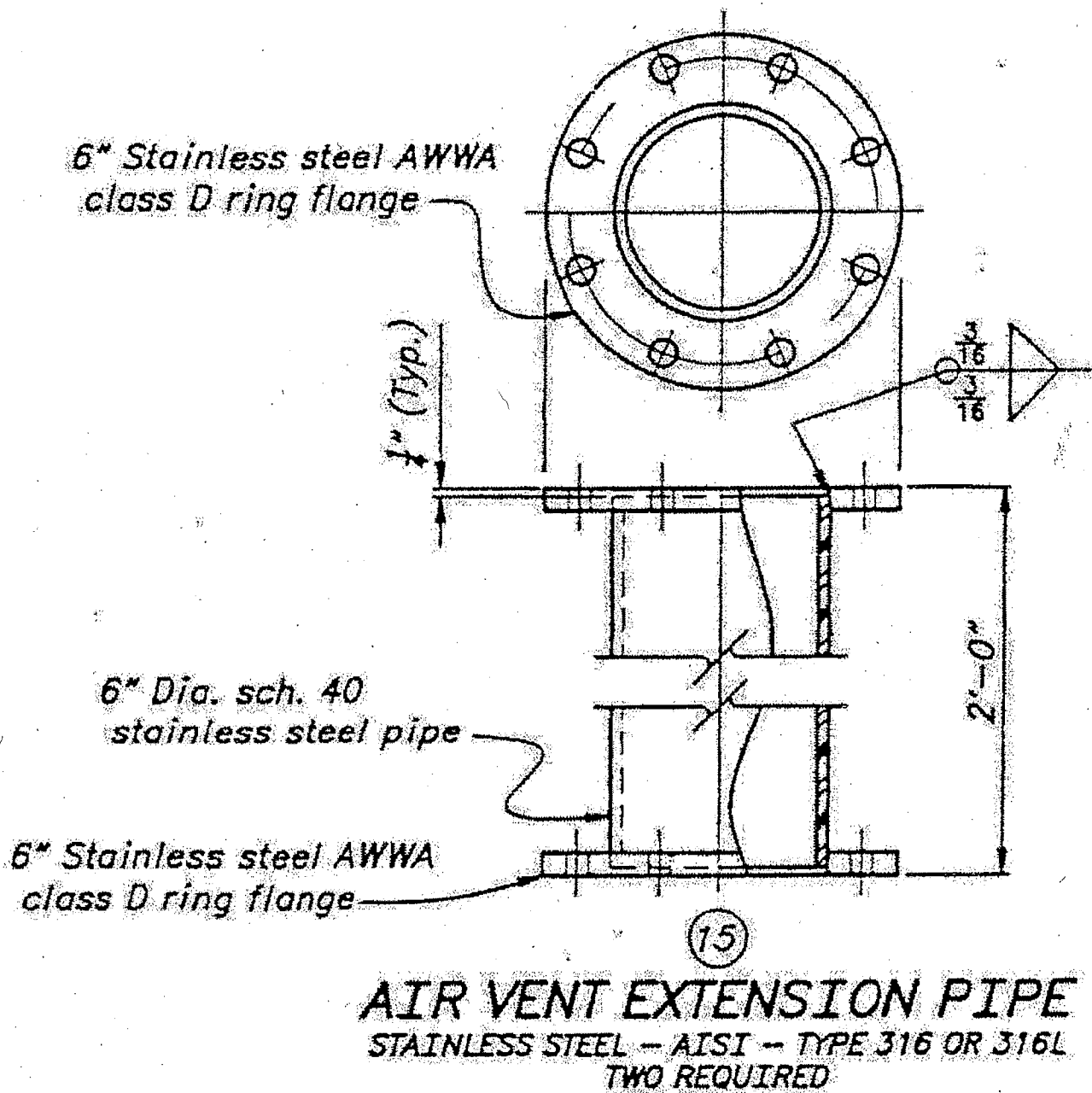


Figure 5



Figure 6

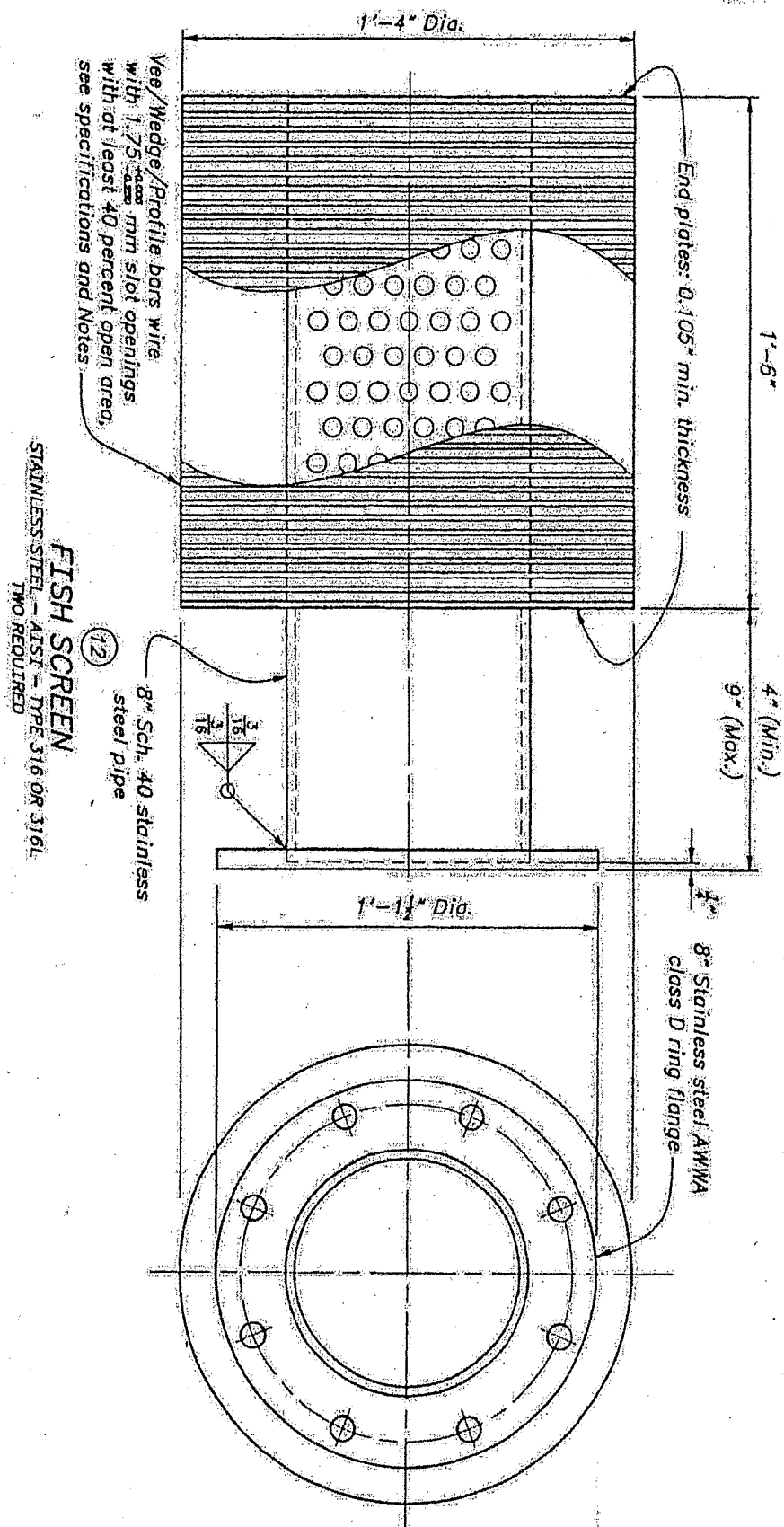
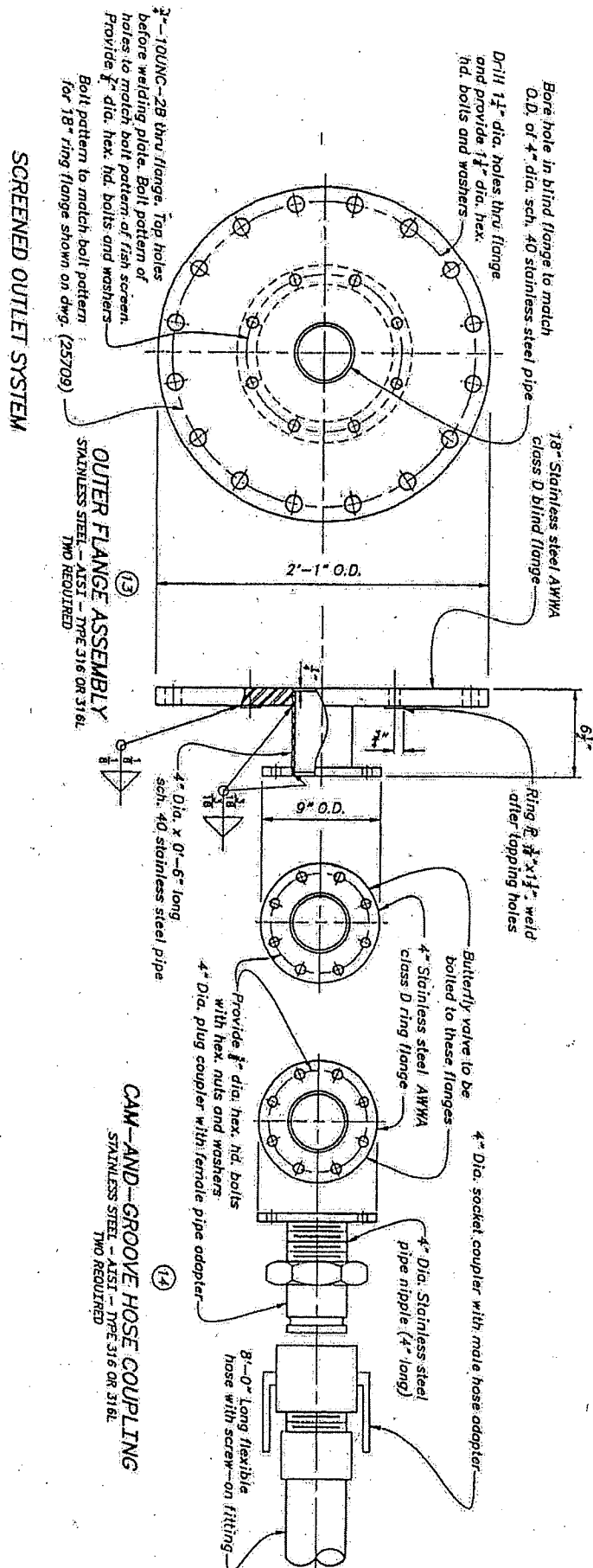


Figure 7





STATE OF CALIFORNIA
ADMINISTRATIVE REQUIREMENTS
TRUCK, FISH TANK, 3500 GALLON

67129AR

1 REGISTRATION

The original dealer's "Report of Sale" shall be furnished by all California licensed dealers at the time of delivery of each unit or units covered by these specifications. A California certification of compliance for vehicle pollution must be supplied at the time of delivery of each unit. An original weight certificate from a California certified Weigh Master for registration purposes must be supplied at the time of delivery of each unit. A Federal Excise Tax Exempt Certificate will be attached to the purchase order. All documentation supplied for registration shall contain the following physical and post office box addresses:

State Department Water Resources
1416 9th Street
Sacramento, CA 95814

State Department Water Resources
P.O. Box 942836
Sacramento, CA 94236-0001

All required documentation shall be sent to one of the above addresses by the time of delivery.

NOTE: The State shall register/license all vehicles with the Department of Motor Vehicles.

2 WORKMANSHIP

The equipment and any accessories shall be a product of good workmanship and shall be free from any defects that will affect their appearance or serviceability.

3 OPERATOR'S AND LUBE INSTRUCTIONS

One set of standard operator's and lubrication instructions shall be supplied with each unit.

4 SAFETY

The entire unit and accessories shall comply to the applicable provisions of the California Vehicle Code, the Safety Orders of the Division of Industrial Relations, and all Federal regulations in effect at the time of manufacture. Only a State of California licensed professional engineer in the employ of Caltrans, Equipment Engineering Specification shall be authorized to make determinations where safety compliance is an issue.

5 WARRANTY

The truck cab and chassis, including but not limited to the engine, drive train, suspension, electrical system, all modifications made to the unit prior to delivery, etc., and any optional accessory, shall be free from defects in workmanship and materials and be covered (parts and labor) under warranty for one (1) year or 12,000 miles, whichever occurs first, following the date the Department puts the unit into service. The Department will notify the supplier by mail of the in-service date and keep a record of the in-service date.

A copy of the manufacturer's standard warranty for the unit, any accessory, optional equipment, and components shall be supplied with each unit at delivery, or upon request. The manufacturer will be held responsible for warranty (commencing from the date the Department puts the unit into service) for the following circumstances:

- The manufacturer's standard warranty exceeds one (1) year or 12,000 miles, whichever comes first. Under this circumstance, the supplier is responsible until one (1) year or 12,000 miles, whichever comes first, is reached. The manufacturer will be held responsible for the balance of the manufacturer's standard warranty.
- The supplier is no longer an authorized dealer of the equipment supplied. Under this circumstance, the manufacturer will be held responsible for the balance of the manufacturer's standard warranty. The manufacturer shall establish a fully operational warranty service provider with capabilities equal to or exceeding the supplier's (or his designated warranty provider) within 45 days of the supplier's authorized dealer termination.

- If the supplier is not the manufacturer or manufacturer's authorized representative, then a statement agreeing to the warranty conditions stated herein shall be signed by the manufacturer and submitted upon request prior to Purchase Order award.

6 IN PROCESS REVIEW

The unit(s) may require an in process review to verify timely progress of construction of the unit(s) and to ascertain compliance with the intent of the specifications and drawings. If there are any questions regarding the intent of the specifications or drawings, call the "Agency Contact" as indicated on the Purchase Order title page. Any in-process review will be at State expense conducted within the State of California only and will not constitute acceptance of the unit(s).

7 INSPECTION

This order will require a two (2) phase inspection process. For all inspections the units will be serviced, washed and ready for, as applicable, inspection or delivery. Inspections will begin within five (5) working days from the date of the inspection request by the supplier. It is the supplier's responsibility to contact DWR's Transportation Office for inspections at (916) 653-9051.

FIRST PHASE (PRE-DELIVERY INSPECTION): In accordance with the State Administrative Manual, Section 4112 and the Department of Water Resource's Transportation Office inspection program, each unit will be inspected prior to shipment to the destination on the purchase order. This inspection trip shall be State financed at no cost to the supplier.

The units shall be identified with the applicable Purchase Order Number. If corrections are needed as a result of the inspection, the corrections shall be made prior to shipment to the purchase order destination. Authorization to deliver the units must be granted by the Department of Water Resources, Division of Management Services, Transportation Office.

If additional interim inspections are required, such inspection trips shall be at the expense of the supplier at \$75.00 per hour (including travel time) and all expenses (meals, lodging, and cost of transportation). Travel expenses will be documented on State of California, Travel Expense Claim Form, FA302. These fees may be deducted from the invoice.

PRE-DELIVERY INSPECTION LOCATION: The inspection shall be conducted by the Department of Water Resources, Division of Management Services, Transportation Office. These inspections shall take place at an adequate site provided by the vendor within the State of California. The inspection site shall meet all of the following criteria:

- a. The site shall not be the Purchase Order delivery destination. The site shall be paved, secure and zoned for commercial use.
- b. The site shall include electricity, lights, water, compressed air and a secure paved lot. The facilities shall also include lift equipment adequate to raise the units and support them on safety stands with a minimum of 12 inches of tire clearance. The supplier shall provide conditions which meet the safety standards of CAL-OSHA and Title 8 of the California Code of Regulations.
- c. The adequacy of the site shall be determined by the Department of Water Resources, Division of Management Services, Transportation Office. Contact the Senior Inspector of Automotive Equipment at (916) 653-9051.
- d. If the facility is deemed unacceptable by Department of Water Resources, Division of Management Services, Transportation Office, the vendor shall be billed for the inspection trip including wages and expenses. This cost shall be deducted from the purchase order payment.

SECOND PHASE (FINAL INSPECTION): Each unit will have a final inspection at its delivery destination shown on the Purchase Order to verify acceptability. The State will have five (5) working days after delivery of a unit to conduct the final inspection of said unit. A unit delivered to the final Purchase Order destination will be accepted only when all Purchase Order requirements have been met, any shipping damages have been corrected, and all required documents are received by the Department of Water Resources, Division of Management Services, Transportation Office. These documents include, as applicable, the invoice, vehicle registration documents, parts book, operator's manuals, service manuals, lubrication instructions and charts, warranty information,

certifications, questionnaires, etc. A unit which is not accepted by the delivery date on the Purchase Order will be considered delivered late.

If the supplier receives notice that the unit is not acceptable, whether written or oral, the unit shipped to the Purchase Order destination shall be removed within seven (7) calendar days. If the supplier fails to remove said unit from the State's facilities within the specified period, the State may forward said unit to the supplier by common carrier at the supplier's expense and risk.

8 DELIVERY

Inspection, delivery, and final acceptance of the unit on the Purchase Order shall be within 180 calendar days after the Purchase Order date. Contact the State of California, Department of Water Resources, Division of Operations and Maintenance, Transportation Office at (916) 653-9051 for delivery. The final delivery destination will be the Department of Water Resources' Corporation Yard, located at the address below

4300 West Capitol Ave.
West Sacramento, CA 95691

Failure of any units to comply with the specifications by the final delivery date may place the supplier in default and may be grounds for the State to invoke Paragraph 26 of the General Provisions, Rights and Remedies of the State for Default. The Department of General Services, Procurement Division will be notified at such time.

Acceptance of delivery or placement in operation of any equipment shall not release the manufacturer from liability for faulty design, workmanship, or materials appearing even after final payment has been made.

9 PAYMENT

Process for payment will be initiated on each unit as units are received and deemed acceptable. The discount period will start after acceptance of each unit on the Purchase Order.

10 SERVICE TOOLS AND PARTS

Furnish the following spare parts:

- Two oxygen inline filters and eight replaceable cartridge filters.
- Six needle valve flowmeters
- Six air stones
- Four neoprene hatch seals
- Eight draw type latching assemblies for the hatch lid
- Two combination air vent/vacuum relief valves
- Two tank pressure switches
- Eight exterior tank light bulbs
- A complete set of tank mounting bolts with springs

Special Tools:

- Furnish two sets of wrenches and special tools required for assembly and disassembly and all other appurtenances and accessories that may be required to make the units complete and ready for operation.
- Furnish tools of high-grade, forged alloy tool steel.
- Furnish a steel box for storage of the special tools.

11 TRAINING

Training shall be provided to as many as six state employees within two weeks of successfully completing the acceptance testing (see 67129test.pdf). Contractor to fully demonstrate to State personnel the operation and maintenance requirements of the fish hauling truck tank equipment.

12 GENERAL

One (1) complete set of filters (air, oil, water, fuel, hydraulic, etc.) shall be supplied with all units delivered. This set of filters shall be as recommended by the manufacturer and shall be complete with the appropriate part numbers for identification.

Each unit and any accessory shall be delivered completely assembled and ready to operate.

No exceptions to the specifications will be allowed unless the exceptions are listed on the purchase order or subsequent addenda.

The component parts of the unit shall be new and of proper size and design to safely withstand the maximum stresses imposed.

The manufacturer's torque rating of each driven part shall be equal to or exceed the torque rating of its driving member.

Complete printed specifications, published literature, and photos or illustrations of unit or units that the bidder proposes to furnish shall be supplied upon request.

All equipment and accessories cataloged as standard, unless superseded by these specifications, are to be furnished and included in purchase price of this unit.

Bids will be considered only on equipment represented by a supplier capable of providing adequate repair parts, warranty, technical assistance, and training in the United States as of the bid opening date. The supplier shall be capable of supplying repair parts to within five (5) working days after a purchase order for parts is submitted to the supplier, whether by phone, fax, or mail.

Bidders may be required to provide documentation supporting this requirement prior to award of the contract.

Suppliers shall be the equipment manufacturer, an authorized factory dealer or representative thereof, or shall have authorization from the equipment manufacturer or authorized factory dealer to solicit the equipment bid. The bidder shall be capable of providing parts, service, warranty, and training for the equipment bid as specified herein. If the bidder cannot provide these items for the equipment bid, the equipment manufacturer or an authorized factory dealer may provide these items for the bidder. Upon request, the signed agreement between the bidder and the equipment manufacturer or authorized factory dealer, stating who will be responsible for providing parts, service, warranty, and training for the equipment bid, shall be provided to the State.

Bids will not be considered if supplier's designated f.o.b. delivery destination is other than the delivery address stated in the invitation to bid.

Only new models in current production, which are cataloged by the manufacturer and for which manufacturer's published literature and printed specifications are currently available, will be considered. Special options may be included only when recommended by the manufacturer of the unit and approved by the State.

All equipment/options are to be factory installed. If the equipment/options are not available factory installed, dealer installed equipment/options may be acceptable. The bidder is to specify those items which will be dealer installed.

The State reserves the right to amend the contract up to 10% of the purchase order price to cover deficiencies or inconsistencies within or between the technical specifications and or drawings. These amendments shall cover the cost of any materials involved and or the standard shop labor rate for modification or installation.

The State reserves the right to purchase a minimum of one (1) additional unit at bid prices, for State Agencies and California Local Government Agencies. Orders for such additional units shall be placed within 120 days of bid award date.

13 CHANGE ORDERS

This contract may be amended, modified, or terminated at any time by mutual agreement of the parties. Change orders amending, modifying, or terminating the contract including any modification of the compensation payable, may be issued only by the State Procurement Officer and shall be in writing. Termination, as that term is used in this section, does not include termination for default of the supplier.



STATE OF CALIFORNIA
ACCEPTANCE TESTING
TRUCK, FISH TANK, 3500 GALLON

67129TEST

1 ACCEPTANCE TESTING

- 1.1 Notify the Department in writing at least two weeks in advance concerning when the shop testing is to be performed. Shop testing to be witnessed by DWR personnel.
- 1.2 Fill each tank with water. Document the capacity in gallons of water of each tank. Demonstrate that the tanks, the outlets, and the flanged connections on the tanks do not leak.
- 1.3 Test each hatch to demonstrate ease of operation as the hatch lids are fully opened and closed, with no binding or interference, and that each hatch lid (latching assemblies) provides a water tight seal.
- 1.4 Test each exterior tank light and switch to show proper operation and adjustment capabilities.
- 1.5 Test the operation of the truck back lights (tail, turn, brake and backup lights) to show proper operation.
- 1.6 Adjust and set the oxygen supply system pressure regulator setting to 40 pounds per square inch.
- 1.7 Set the low pressure warning switch (oxygen system) to close a contact element on lowering pressure at 500 pounds per square inch. Contact to activate the low pressure warning light in the truck's cab.
- 1.8 Set each oxygen supply system flowmeter to 2 liters/minute for each air stone.
- 1.9 Test each combination air vent/vacuum relief valve.
- 1.10 Test that each tank pressure relief valve is set at 3 pounds per square inch.
- 1.11 Test each oxygen and air line isolation valve operation. Tests to demonstrate that the valves seat tightly with no leakage. Completely open the isolation valves at the end of testing
- 1.12 Test the oxygen supply and distribution system to show proper operation. Test each system with the hauling tank full of water, $\frac{3}{4}$ full of water, $\frac{1}{2}$ full of water, and empty.
- 1.13 Test the chassis air supply and distribution systems. Tests to demonstrate the following:
 - Test each knife gate system through its full range of operation over three complete cycles with a full tank. Adjust and set the air flow controls for the knife gate cylinder. Tests should demonstrate that the knife gate seats with no leakage.
 - Test each butterfly valve system through its full range of operation over three complete cycles with a full tank. Adjust and set the air flow controls for the butterfly valve cylinder. Tests should demonstrate that the butterfly valve seats with no leakage.
- 1.14 Test for oxygen and air leaks by spraying a soap and water mixture on all the piping and fittings.
- 1.15 Test all indicating lights and switches for proper operation.
- 1.16 The Contractor to make required changes, corrections, and adjustments until the installation is satisfactory to the Department's Representative.



**STATE OF CALIFORNIA
BID SPECIFICATION
TRUCK, FISH TANK, 3500 GALLON**

66934TQ

1 QUESTIONNAIRE

For the bid to be considered complete, the following questionnaire must be filled out and submitted with the bid package.

Bidder: WEST-MARK
Make: STERLING

Solicitation #: 57018
Model: LT9513

Date: 8/13/08

GENERAL:	GVWR	<u>66,000</u> lbs.
	GCWR	<u>80,000</u> lbs.
	Curb Weight	<u>18,282</u> lbs.
	Cab to Axle Centerline Distance	<u>160</u> in.
	Cab to End of Frame Distance	<u>232</u> in.
ENGINE:	Gross Power	<u>410</u> HP
	Torque	<u>1450</u> lbs.-ft.
	Engine brake make/model	<u>MERCEDES BENZ PREMIUM COMPRESSION / TURBO</u>
	Air cleaner restriction indicator?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	Fuel water separator?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
COOLING SYSTEM:	Coolant/anti-freeze rating	<u>-60 F</u>
	Thermostatically controlled fan?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
ELECTRICAL:	System Voltage	<u>12V</u>
	Alternator current rating	<u>160</u> Amps.
	Cold Cranking Amp rating of the batteries	<u>1850</u> CCA
TRANSMISSION:	Transmission make/model	<u>ALLISON 4000 RDS</u>
	Transmission cooler?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	Is the transmission filled with synthetic transmission fluid?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
BRAKES:	Anti-lock Braking System?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	Compressor CFM	<u>15.5</u> CFM
	Are brakes self adjusting?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	Air dryer included?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
STEERING:	What type of steering is included?	<u>TRW THP-60 W/RCH 45</u>
	<u>AUXILIARY GEAR</u>	
WHEELS & TIRES:	What is the tire size?	<u>F 425/65R 22.5 20PLY</u>
		<u>R 11R24.5</u>
	What is the load range?	<u>F 20</u>
		<u>R 16</u>
AXLES:	What is the front axle weight rating?	<u>20,000</u>
	What is the rear axle weight rating?	<u>46,000</u>
	Are the axles equipped with Stemco Style Hub Seals?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	Are the axles filled with synthetic oil?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

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SUSPENSION:	List the Front Suspension Type? List the Rear Suspension Type?	20000# TAPERLEAF HENDRICKSON RT463
FRAME:	What is the Resistance Bending Moment (RBM)? What is the yield strength of the frame?	3,217,200 in-lbs. 120K PSI
FUEL TANK:	What is the total fuel capacity?	150 Gal.
***	FISH HAULING TANK REQUIREMENTS	***
TANK CAPACITY	What is the fish tank capacity?	3500 Gal.
TANK MATERIAL	What ASTM material will be used to construct the tank?	1/2" BODY 7GA HEADS T-316L
TANK DESIGN	Is the tank U-shaped or Elliptical?	ELLIPTICAL
TANK INSULATION	Is the tank insulated?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
TANK SLOPE	At what angle does the tank slope toward the rear invert?	1.5 deg.
EXIT PORT	Is the exit port in common plane with the tank invert? What are the dimensions of the exit port? 24"ID x 16"ID TRANSITION x 10" DIA PIPE	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
ACCESS HATCHES	Are the hatches and tank designed to support the weight of the loaded bucket which is 7,000 lbs. What shape and size are the access hatches?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No 30" ID
AIR VENT/VACUUM RELIEF	How many tank air vents/vacuum reliefs are being supplied? Do these air vents/vacuum reliefs conform to the specification?	1 VACUUM & 1 PRESSURE YES
SCREENED OUTLET SYSTEM	Is the screened outlet system designed to protect the fish while allowing controlled release of the water from the tank during a water-to-water transfer of fish from the loading bucket to the fish hauling tank?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
OXYGEN DISTRIBUTION SYSTEM	What size oxygen bottle is the rack designed to hold? Can the rack be removed with a forklift and crane?	9" DIA x 57" TALL <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
AERATORS	List the manufacturer, model, and number of aerators being supplied.	(4) EA FRESH FLO MODEL TT
WALKWAY, HANDRAIL, AND ACCESS LADDER	Is the walkway located on the right side of the truck? What is the height of the hand rail from ground level? Is the access ladder sloped to allow safe access when the truck is parked on a slope of 20 degrees?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No 13' 6" <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
WASH DOWN SYSTEM	Is the truck being supplied with a wash down system?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No